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<b>PRE-APPEAL BRIEF REQUEST FOR REVIEW</b>		<b>Docket Number (Optional)</b> 059864.01716
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	<p>First Named Inventor:</p> <p>G. KRISHNAMURTHI et al.</p>	
	<p>Art Unit: 2617</p>	
	<p>Examiner: Michael A. FARAGALLA</p>	
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a Notice of Appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <p>I am the</p> <div style="display: flex; justify-content: space-between; align-items: flex-start;"><div style="width: 45%;"><p><input type="checkbox"/> Applicant/Inventor.</p><p><input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96)</p><p><input checked="" type="checkbox"/> Attorney or agent of record. Registration No. <u>64,236</u></p><p><input type="checkbox"/> Attorney or agent acting under 37 CFR 1.34. Registration Number if acting under 37 CFR 1.34 _____</p></div><div style="width: 45%; text-align: center;"><div style="margin-bottom: 20px;"> _____ Signature</div><div style="margin-bottom: 20px;"><u>Loren H. Tung</u> _____ Typed or printed name</div><div style="margin-bottom: 20px;"><u>(703) 720-7820</u> _____ Telephone number</div><div><u>April 30, 2009</u> _____ Date</div></div></div> <p>NOTE: Signatures of all of the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.</p> <p><input checked="" type="checkbox"/> *Total of <u>1</u> form is submitted.</p>		

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Confirmation No.: 8359

G. KRISHNAMURTHI et al.

Art Unit: 2617

Application No.: 10/785,407

Examiner: Michael A. FARAGALLA

Filed: February 25, 2004

Attorney Dkt. No.: 059864.01716

For: METHOD OF REDUCING DENIAL-OF-SERVICE ATTACKS AND A SYSTEM AS  
WELL AS AN ACCESS ROUTER THEREFOR

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

April 30, 2009

Sir:

Applicants hereby submit this Pre-Appeal Brief Request for Review of the final rejections of claims 1, 3, 7, 12, and 22-23 in the above identified application. Claims 1, 3, 7, 12, and 22-23 were finally rejected in the Office Action dated February 4, 2009. Applicants hereby respectfully submit that each of the remaining rejections contains clear error. A Notice of Appeal is timely filed concurrently herewith. Claims 1, 3-7, 12, 14-16, and 21-27 are currently pending in the application, of which claims 1, 7, 12, and 22-23 are independent claims.

**Clear Error 1: "Authorizing" Features Not Found in the Cited Art**

Claims 1, 3, 7, 12, and 22-23 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent No. 6,137,791 of Frid et al. ("Frid") in view of U.S. Patent No. 6,370,380 of Norefors et al. ("Norefors") and further in view of Candidate Access Router Discovery, October 2002, IETF Seamoby Working Group of Chaskar et al. ("Chaskar"). The Office Action acknowledged that Frid fails to disclose or suggest all of the features of claim 1, 3, 7, 12, and 22-23, and cited Norefors and Chaskar to remedy the deficiencies of Frid with respect to these rejected claims. Applicants respectfully submit that these rejections contain clear error because the "authorizing" features recited in the claims are not disclosed in the cited art.

Specifically, the combination of Frid, Norefors, and Chaskar fails to disclose or suggest, at least, “authorizing the mobile node to participate in a candidate access router discovery [(CARD)] procedure,” as recited in independent claim 1 and similarly recited in the other independent claims. The Office Action asserted that these features are disclosed by Frid at column 4, lines 40-64. In the cited portion, Frid refers to a home location register (HLR) that authenticates a mobile station.

However, Frid fails to disclose or suggest authorizing the mobile station of Frid to participate in the CARD procedure of the claimed invention. Accordingly, Frid does not disclose or suggest, at least, “authorizing the mobile node to participate in a candidate access router discovery procedure,” as recited in independent claim 1. As supported in the specification, the authenticating and the authorizing of the claimed invention are two separate operations: “the access router typically authenticates the mobile terminal and ensures that it is authorized to participate in the candidate access router discovery process” (*see* Specification at paragraph 43). In contrast, Frid refers to only the authenticating of the mobile station, as discussed above. In addition, Frid fails to even mention the CARD procedure of the claimed invention. Accordingly, Frid cannot achieve the purpose of the claimed invention, which is “reducing denial-of-service attacks by malicious mobile nodes” (*see* Specification at paragraph 13).

Norefors and Chaskar do not cure these deficiencies of Frid. Norefors refers to an access point that authenticates a mobile terminal (*see, e.g.*, Norefors at column 3, lines 12-22), but like Frid, fails to disclose or suggest the authorizing and the CARD procedure of the claimed invention. Chaskar refers to a mobile node (MN) required to perform a CARD process (*see, e.g.*, Chaskar at Abstract), but does not disclose or suggest authorizing the MN to participate in the CARD process. In other words, Chaskar fails to disclose or suggest ensuring that the MN is authorized to participate in the CARD process. The Advisory Action dated April 21, 2009, asserted that these features are disclosed by Chaskar at section 4.2. However, in the cited portion, Chaskar refers to only the problem that the MN may not have the required security associations with candidate access routers to participate in the CARD process. Therefore, Chaskar cannot achieve the purpose of the claimed invention to reduce denial-of-service attacks by malicious mobile nodes, as mentioned above. Accordingly, the combination of Frid,

Norefors, and Chaskar does not disclose or suggest, at least, “authorizing the mobile node to participate in a candidate access router discovery procedure,” as recited in independent claim 1.

Thus, independent claims 1, 7, 12, and 22-23 are nonobvious, and the rejections of these claims are clearly erroneous. The subject matter of dependent claim 3 (which has its own scope) is nonobvious for similar reasons, and therefore, the rejection of this claim is clearly erroneous.

**Clear Error 2: “Populating” Features Not Found in the Cited Art**

As discussed below, each of the rejections of each of the claims contains clear error, because the “populating” features recited in the claims are not disclosed in the cited art. Specifically, the combination of Frid, Norefors, and Chaskar fails to disclose or suggest, at least, “populating the cache with a cache entry in response to a handover action of the mobile node, wherein the cache entry concerns a neighboring access router” as recited in independent claim 1 and similarly recited in the other independent claims. The Office Action asserted that these features are disclosed by Frid at column 4, lines 36-48. In the cited portion, Frid refers to a HLR for storing subscription data representing the mobile station and for maintaining location data reflecting a mobile station’s current location. Whenever the mobile station travels into a particular geographic area, the base station serving that geographic area transmits identification data informing the mobile station of the current location (*see* Frid at column 4, lines 29-32).

However, Frid fails to disclose or suggest populating the HLR with an entry that concerns a neighboring access router in response to a handover action of the mobile station. Accordingly, Frid does not disclose or suggest, at least, “populating the cache with a cache entry in response to a handover action of the mobile node, **wherein the cache entry concerns a neighboring access router**,” (emphasis added) as recited in independent claim 1 and similarly recited in the other independent claims. In contrast, Frid refers to the HLR storing data representing only the mobile station when the mobile station travels into an area, as mentioned above.

Norefors and Chaskar do not cure these deficiencies of Frid. Norefors refers to a handover procedure from a first access point to a second access point (*see, e.g.*, Norefors at column 4, lines 14-57), but fails to disclose or suggest the populating of the claimed invention. Chaskar refers to discovering candidate access routers for a handover prior to the initiation of the handover (*see, e.g.*, Chaskar at Abstract), but does not disclose or suggest populating a cache with a cache entry that concerns one of the candidate access routers in response to the handover.

Accordingly, the combination of Frid, Norefors, and Chaskar fails to disclose or suggest, at least, “populating the cache with a cache entry in response to a handover action of the mobile node, wherein the cache entry concerns a neighboring access router,” as recited in independent claim 1.

Thus, independent claims 1, 7, 12, and 22-23 are nonobvious, and the rejections of these claims are clearly erroneous. The subject matter of dependent claim 3 (which has its own scope) is nonobvious for similar reasons, and therefore, the rejection of this claim is clearly erroneous.

**Clear Error 3: “Cache” Features Not Found in the Cited Art**

As discussed below, each of the rejections of each of the claims contains clear error, because the “cache” features recited in the claims are not disclosed in the cited art. Specifically, the combination of Frid, Norefors, and Chaskar fails to disclose or suggest, at least, “wherein a total number of cache entries that can be tagged and thus introduced into the cache by the mobile node is limited” as recited in independent claim 1 and similarly recited in the other independent claims. The Office Action asserted that these features are disclosed by Frid at column 4, lines 36-48. In the cited portion, Frid refers to the HLR for storing subscription data representing the mobile station and for maintaining location data reflecting the mobile station’s current location.

However, Frid fails to disclose or suggest that a total number of entries that can be tagged and thus introduced into the HLR by the mobile station is limited. Accordingly, Frid does not to disclose or suggest, at least, “wherein a total number of cache entries that can be tagged and thus introduced into the cache by the mobile node is limited,” as recited in independent claim 1.

Norefors and Chaskar do not cure these deficiencies of Frid. Norefors refers to a method for protecting communications relating to a mobile terminal during a handover (*see, e.g.*, Norefors at Abstract), but fails to disclose or suggest that the total number of cache entries that can be tagged and thus introduced into a cache by a mobile node is limited. Chaskar refers to a list of candidate access routers (*see* Chaskar at page 7, section 4.3.1), but does not disclose or suggest that the total number of entries that can be tagged and thus introduced in the list by a mobile node is limited. Accordingly, the combination of Frid, Norefors, and Chaskar fails to disclose or suggest, at least, “wherein a total number of cache entries that can be tagged and thus introduced into the cache by the mobile node is limited,” as recited in independent claim 1.

The Advisory Action appeared to assert that these features are inherent “since the memory is always a limited resource and there is a limit as to how many data entries can be

processed" (*see* Advisory Action at Continuation Sheet). Applicants respectfully traverse this assertion of inherency. Although memory may be a limited resource, it is not necessary that a total number of cache entries that can be tagged and thus introduced into a cache by a mobile node be limited. Instead, it is possible that "valid entries will be replaced with erroneous ones, thus directly affecting the support of non-malicious mobile terminals," which is the problem that the "cache" features address, and that the Advisory Action overlooked (*see* Specification at paragraph 44). Accordingly, the cited art does not inherently teach the "cache" features.

Thus, independent claims 1, 7, 12, and 22-23 are nonobvious, and the rejections of these claims are clearly erroneous. The subject matter of dependent claim 3 (which has its own scope) is nonobvious for similar reasons, and therefore, the rejection of this claim is clearly erroneous.

For the reasons set forth above, it is respectfully submitted that each of claims 1, 3, 7, 12, and 22-23 recites subject matter that is neither disclosed nor suggested in the cited art. It is, thus, respectfully requested that all of claims 1, 3-7, 12, 14-16, and 21-27 be allowed, and that this application be passed to issuance. Reconsideration and withdrawal of the rejections, in view of the clear errors in the Office Action, is respectfully requested. In the event this paper is not being timely filed, Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



Loren H. Tung  
Registration No. 64,236

**Customer No. 32294**  
SQUIRE, SANDERS & DEMPSEY LLP  
14<sup>TH</sup> Floor  
8000 Towers Crescent Drive  
Vienna, Virginia 22182-6212  
Telephone: 703-720-7800  
Fax: 703-720-7802  
LHT:skl  
Enclosures: PTO/SB/33 Form  
Notice of Appeal  
Check No. 20789